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GLOBALIZATION AND THE BUILT ENVIRONMENT: URBANIZATION AND SUSTAINABLE HOUSING DEVELOPMENT

Babalola, Daniel Olatunde
Department of Architecture, College of Science and Technology, Covenant University, Canaan Land Ota, Ogun State, Nigeria. ***E-mail: obablola@yahoo.com Date: 24-26 January, 2006***

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ABSTRACT:

The issue of urbanization as a phenomenon has become a reality of the modern world even as it undergoes various transformations. The entire world regarded as rural in 1700 with less than 5% of its population living in cities has grown to become more urbanized in 2000 AD with at least 50% of its population already living in cities. It is also estimated that in the years 2050, 2100 and 2200 at least 66%, 90% and 95% of the population respectively will live in cities. Thus by 2200 A.D it is expected that the whole world will be urbanized to a level to be described as one global city (or urban world). It could have being a thing of joy for a village (or rural area) to be transformed into a city (urban area), but for the accompanying problems, which unless they are solved along with its transformation, the expected bliss will remain an illusion. Urbanization, a measure of development and civilization resulted from natural increase in population due to increased birth rate as against comparatively lower death rate, rural urban migration and in-migration of foreigners mostly to urban areas of countries. While we have tremendous increase in population in urban areas, the rural areas are also increasing at a lower rate but very significant increase in population as well. The growth imposed unlimited strains on inadequate housing and other infrastructural facilities that can make life more meaningful in urban areas, while in the rural areas inadequate housing provision both in quantity and quality and lack of infrastructural facilities are common features. The growth in cites in the developed nations has stabilized to some extent, but most growth is occurring in the cities of the poor, less developed and developing nations that are ill equipped to accommodate it. This paper attempts to discuss issues of sustainable housing development especially in the less developed and developing nations of the world as a panacea to this aspect of globalization.

Key words: Development, globalization, housing, population, sustainability, urbanization.

ARTICLE OUTLINE

1.0 Introduction

The course of this 21st century will undoubtedly be determined by the global scale, impact of urban settlements and cities- which are now responding to both local and global influences. Megacities are exploding in size and growth, and this urban explosion is international in its origins and influences, affecting every continent and country, due to globalization, multinational political affiliations, transportation, telecommunications and commerce. As a result of explosive growth, unplanned cities often characterized by chaotic flow of humankind undergoing unprecedented growth, migration, and an attendant diminution of natural resources beyond the limits of sustainable life, has rather shaped mankind instead of mankind shaping cities. Before 18th century, the entire world with less than 5% of its population living in cities was regarded as rural. But by 18th and 19th centuries, Europe and North America became increasingly urbanized, and cities and countries more

separated into disparate zones impelled by the Industrial Revolution, while cities in non-industrial countries remained small, still characterized by rural, herding and agricultural economies.

In 1900, only 160 million people (10%) of the world's population lived in cities. In 2000, more than 3 billion people (over 50%) of the world's population were urban dwellers (living in cities). In the last 100 years, world population has grown from about 1.6 billion to 6 billion. This near four-fold increase was accompanied by an alarming twenty-fold increase in the world's urban population. By the year 2050, an estimated two-third of the world population of about 10 billion will live in urban areas.

1.1 Emergence of Megacities

Another dimension of urbanization is the emergence of megacities. The last 50 years has witnessed the emergence of megacities - enormous metropolises with more than 8 million people each, Table 2 (i-ii). Most will be in newly developing economies of the developing world, making the urban explosion almost exclusively a developing world phenomenon. The impacts, however, will be evident globally in terms of worldwide economic infrastructure, global environmental quality, health and human cultural influences that have no boundaries. The cities of the 21st century are by definition global cities. While growth of cities in the developed nation has stabilized somewhat, most growth is occurring in the cities of the poor, less developed and developing nations that are ill equipped to accommodate it. This serves to aggravate the perception of a geopolitical and economic divide between the world rich and poor.

1.2 Migration

Population growth drives the increase pace of global urbanization and is accelerated by unplanned and unpredicted migration. In developing countries, there is always the general trend of rural urban migration the movement of people from country side or villages to cities or towns which comes as a reaction to some of the prevailing multifarious conditions in rural areas. The push and pull factors of rural urban migration include:

-Lack of social amenities such as Good Roads, Electricity, Pipe-borne Water, Hospital, Banks, etc. contribute in compelling people to leave rural areas.

-Availability of recreational facilities such as Stadia, Swimming pools, Cinema Houses, Amusement park etc. in urban areas make people leave rural areas.

-Higher educational facilities such as institutions of higher learning e.g. Universities, Polytechnics and Colleges of education located in urban areas make people to migrate from rural to urban areas.

-Employment opportunities that abound in urban areas compel people to leave rural areas

-Marriage, newly married ladies whose husbands are in the urban areas leave their bases in order to go and live with their spouses.

-Business activities, people with business intentions move to urban areas where business action abounds.

-Natural disasters, outbreak of diseases, erosion, earthquake etc. may compel people to move to urban areas.

-Political reason may compel people to migrate from rural to urban areas as centre point of political activities.

The rural urban migration leads to uneven distribution of population (the urban areas becoming densely populated at the expense of rural areas), Congestion, Overcrowding, inadequate housing, Increased house rents, Escalation of unemployment, Increase in crime rate, Agriculture greatly affected as able bodied people move to urban areas leaving children and the aged behind in the rural areas to practice agriculture, increased prices of goods (as a result of presence of many unproductive unemployment in the cities, Low Agricultural productivity etc. are some of the contributory factors to increase in prices of good), disparity in development- the dense population in urban areas attract more government attention at the expense of relatively sparse population in rural areas. It should be noted that natural increase in

population is a very important factor than migration pattern alone. Strains are on urban facilities by both factors resulting in overall increase in population in urban cities. Furthermore, the issue of urbanization which resulted from natural population increase, rural urban migration and in-migration of foreigners into countries especially its urban centres has associated with it many problems requiring solution and measures to control and curtail emergence of future problems as well, if humanity is to truly subdue the earth. Some these problems include housing, transportation, communication, electricity and other infrastructural facilities etc.

2.0 Housing

At a time when technology has taken man far into outer space, produced means of extending life and, indeed, artificially creating it, he has been unforgivably slow in finding a solution to the basic need of shelter. Though housing shortage is a worldwide phenomenon among the developing and developed countries but the impact are being accommodated or tackled by the developed world while the developing countries are in helpless situation that seemed to have caught them unaware due to planlessness, poverty and general underdevelopment-making them to be under perpetual burden whose magnitude and negative impacts keep on increasing indefinitely.

Housing shortage has been recorded in both rural and urban communities of all developing countries (including African countries) with the latter being more critical than the former. The magnitude of the global housing needs made the United Nations (UN) from their study revealed that estimated normative housing requirements during the period 1970-1980 were: 323 million dwelling units for the whole world made up of 90 million dwelling units for the developed region and 233 million units for developing regions (UN,1974).With this factual revelation by UN, the delegates at the 1976 United Nations Conference on Human Settlements (Habitat) in Vancouver, Canada, demanded a completely new and radical approach to housing policy which was expected to have a strong political and financial commitment by Governments especially in helping the poorest citizens of the world. The 1976 UN conference estimated an annual construction rate of 8-10 dwelling units/ 1000 population for African and other developing countries as against the low level of annual housing construction rate of 2-4 dwelling units/1000 population.

Based on the UN world Housing Survey, the total housing needs for instance in Nigeria as contained in Nigeria National Housing Policy (established in 1991) was such that 8 million new housing units were required up to the year 2000 A.D. made up 5 million and 3million in urban and rural areas respectively. Similar needs were recorded in other African countries like Sierra Leone, Ghana, Liberia etc. in the same period (up to 2000A.D) with cumulative estimate of 28 to 32 million housing units for the whole of African continent. Housing units construction during above mentioned period (1991-2000, last decade of 20^{th} century) was extremely low due to financial constraints, political instability, lack of political will on the part of various national governments, lack of commitment to functional housing policy (if any) and ignorance of the magnitude of the housing needs.

It should be noted that it took all of human history for the world's population to reach 1.6 billion in 1900, Table 1(ii), 2 billion (an increase of 0.4 billion) in 1930 (30 years interval), 3 billion (an increase of 1 billion) in 1960 (another 30 years interval),4 billion (an increase of 1 billion) in 1977 (17 years interval), 5 billion can increase of 1 billion) in 1989 (12years interval) and 6 billion (an increase of 1 billion) in October 1999 (10 years interval). At the rate of growth in population, in the next few decades, it will get to a level at which there will be an added over 1 billion people per annum which will pose a very difficult challenge to the entire world especially the developing countries. It was also predicted as in Table 1 (a) that the world population would rise to 8.21 billion in the year 2025 A.D. of which Africa, is expected to contribute over 1.617 billion. Of the 2.21 billion net births expected between 1999 and 2025 A.D.

95% will be in the developing countries of the world and specifically over 40% will be in Africa alone. At that time (2025A.D.), Africa's population is expected to exceed that of Europe, USSR, North America and Oceania (Japan) combined. Finally on the population growth challenge is the issue of a country in Africa, Nigeria which is expected to grow from a population of 115million in the year 2000 AD to 339 million by 2050AD to become the 5th most populous country in the world. The most populous being India (1.533billion), China (1.517 billion) Pakistan (357 million), United States of America (348 million) and 5th Nigeria (339 million).

2.1 Definition and Classification

Housing as we have known is a basic human need, second only to food and as old as man himself. He needs it at least to protect himself from physical and weather elements such as sun, rain, snow, wind and wild animal predators. Naturally every man aspires in some ways to have his own shelter irrespective of the type, size or scope. Housing, according to World Health Organization (W.H.O.) - is a residential environment which man uses for shelter and the environmental facilities and amenities he uses in conjunction with the building that make life physical, mental, health and social well being worthy of living. In civilized societies and developed countries almost everyone has access to decent housing, but in developing and less developed countries only very few have access to decent housing while the majority are living in substandard housing classified as urban-slum, squalid, blight, squatter settlements, urban fringe and urban sprawl with the degree of housing needs revealed as one move in such environments. These needs include quantitative and qualitative inadequacies.

2.2 The Role of Housing

Undoubtedly, there is no substitute for housing, as people must have a place to organize themselves before the day's work and to rest at the end of the day's activities, no matter the quality of the so called housing, whether shanty, squatter or slum settlement etc. Housing performs the following roles among others:

-Provides shelter and protection against physical elements such as sun, rain, and wild animals predators.

-Enhances people social status dignity and self-fulfillment in the society.

-It is fixed asset investment which could also serve as collateral security for loan or financial assistance from financial institutions like banks.

-As a unit or group (compound) form residential environment in/shape cities, towns and villages. It gives aesthetic looks and shapes land uses in their locations.

-Housing development in different locations aid development/provision of the associated facilities such as pipe borne water, electricity, sewage system, drainage etc. as well as location of socio-cultural amenities such as market, health centre, schools, recreation facilities etc.

-Housing construction provides employment opportunities for various professionals, artisans, semi-skilled and even unskilled laborers in the society.

-If most of the construction materials are produced or obtained locally e.g. in Nigeria, foreign exchange would be conserved.

-Housing development keep firms/companies in operation, create jobs for workers there and it also creates markets for continuous production of goods, objects and operation of some industries/factories e.g. iron industries, block molding factories, sawmill and timber processing industries etc.

2.3 Housing Supply

The following are some of the factors affecting housing supply: Poverty, Economic recession, Inaccessibility to land, High cost of building materials, Inadequate and poor national housing policy, High standard and stringent condition by the Town planning authority and delay in plan approval; High cost of provision of environmental amenities Clinic, School, Open spaces etc. and other services which may be an additional cost to the original cost of buildings; Lack of enough knowledge in developing and use of local building materials and Defective housing mortgage systems.

2.4 Causes of Housing Problems

These include: Rural urban migration, Increase in population as a result of high birth rate and comparatively lower death rate, In-migration of foreigners mostly urban areas of countries, and All other factors listed under housing supply above.

2.5 Housing Problems

As mentioned earlier, housing problems could be classified as qualitative, quantitative, psychological, and socio- cultural among others.

Quantitative Housing Problem: has to do with insufficiency in the supply of housing compared to the demand by the population. This is the origin of housing shortage which in turn leads to other problems.

***Qualitative Housing Problem*:** this is perhaps the most serious and feasible among the enumerated problems. This is because in many settlements, buildings are of poor qualities, construction techniques, planning and design. There are also lacks of good access roads, social infrastructure facilities such as hospitals, school, market, water supply, electricity and telecommunication to compliment essence of housing.

***Socio-Cultural Housing Problems*:** As people move up in their socio-economic status, so do their tastes for some goods and service they consume. The perception of livable environment and tastes get more and more sophisticated. They get dissatisfied with their old environment which they now consider as substandard. Educational level of individuals, tastes and values attract the perception of housing and the general environment. An educated person for instance, no matter the level of his low income would have higher standards and perception of the housing and environment he wish to live.

Other factors under the socio-cultural problems are tradition, cultural, attachment to family house etc.

***Psychological Housing Problem*:** this often results from inferiority complex conferred on one either by Institutional framework or economic status of the poor in the society. Most cities here planned, semi-planned and unplanned areas. People in the unplanned areas usually referred to as shuns etc usually feel bad about their living conditions. The homeless and others living in squatter settlements usually feel bad about their plight.

The housing problem in developed world are being curtailed or brought under control through various developmental means such as birth control restricted migration and in migration of foreigners. Their economy is buoyant enough to deliver enough housing to cope with the situation even before or as it manifests. But the developing world is a reverse of the situation, the economy has generally been very weak, birth control not enforced or backed by law, migration and in-migration of foreigners not controlled or restricted, thus population in the urban areas kept on increasing at an alarming rate, that of rural areas also kept increasing as well. Thus housing problems both in rural and urban areas became a magnanimous cancer and clog in the wheel of progress of the developing world.

3.0 Sustainable Housing Development

Sustainable housing development can be defined as a program ensuring the ability of present generations meeting their housing needs without jeopardizing the ability of future generations to meet their own needs. The shaping of world cities is a global agenda. Attention will have to focus more on the poorer countries facing more rapid population growth and urban migration which mostly lack the finances, technology or the infrastructure to handle urban explosions. If the phenomenon of rural urban migration continues, the urban areas of less developed countries will face social disintegration. Since urban explosion is an inevitable part of population growth, urban designers, planners and policy makers should re-strategize from all directions on the way out of this doldrums.

Whether rural or urban, nations and international aid organizations will have to triple or quadruple their efforts to stabilize population growth rates to sustainable levels. Many of the developed countries have achieved remarkable progress in reducing their fertility rates. Yet many countries in Africa, Asia, Latin America and the Caribbean, still register fertility rates of more than five children per woman despite their very

high levels of infant mortality. Besides efforts to stabilize their populations, governments of countries with high levels of rural urban migration must initiate creative programs that will reduce determination to migrate. These countries and international industries that partner with them should give job incentives to rural people to keep them in their areas, disperse industries so that the rural people can find jobs closer to home, and improve infrastructures in the rural areas. When they have better economic opportunities and other facilities at home, the people will feel little need to migrate to the cities. Even though the most dramatic and large scale effort to improve the quality of life of people in rural areas may not immediately stem the flow of migrants into the cities, the problem will have to be tacked at both ends. Countries will have to work to improve lives of migrants in the cities so that they do not end up without shelter- becoming public liability persons (PLP). Because of this persistent housing problem, more and more migrants to cities end up living in slums, squatter settlements and shanty towns risking their health and that of the cities. Housing for thousands in cities of the developing countries is a huge task that may entail international involvement in view of the huge financial resources needed. Typical models that have worked elsewhere, demonstrating a combination of urban infrastructure and self-help strategies can create new communities and upgrading of former slums. To embark on housing development in either urban or rural areas, solely by government, private developers, individuals or partnerships, there must be focus on creating such partnerships and participation for more equitable and sustainable development of cities.

The Istanbul declaration from the United Nations Conference on Human Settlements II (Habitat, UN, 1996) calls for "sustainable urban development" and "adequate shelter for all". At the Istanbul conference the world's nations (including Africa and other developing nations) pledged "to ensure consistency and coordination of macro-economic shelter policies and strategies as a social priority within the framework of national development programmes and urban policies in order to support resource mobilization, employment generation, poverty eradication and social integration".

None of the governments of developing countries have been able to meet up with the backlog of housing required at both rural and urban areas since 1996 pledge. The question is where do we go from here? From our preceding discussion, we all agree that this global problem is magnanimous and terrible requiring very drastic, revolutionary, irrational and very unconventional approach. We cannot claim that we want to seek for solution to the problems and at the same time be pampering or romancing with them. We must work from center and move outward, from origin to evolution, atomic nucleus to the electronic orbit etc. The proposed recommendation towards sustainable housing development here is tagged "Zero Approach Land value, Cement and Iron (ZALCI)" in Housing development.

(i) *Governments of countries must abide by the Istanbul declaration from the UN Conference on Human Settlements II (Habitat, UN, 1996) and formulate/Taylor their National Housing Policies for effective housing delivery*. Housing Policy, global or national is a document containing series of statements of intentions thoughts, aims, objectives, ideas, action plans, strategies, programs and philosophies put forward by the world today or governments to address and solve housing problems either at global or national level

(ii) *There should be the creation of necessary institutional framework that would facilitate effective housing delivery*.

The machineries for the achievement of the Housing Policy must be efficient and if already in place or operation must be reviewed and overhauled in a revolutionary manner if it becomes necessary, since a good housing policy should seek to provide and attain adequate housing for every citizen in the country in a very good environment at affordable price.

(iii) Land *should be made available as economical a possible for people to build*. Ideally, land value anywhere all over the earth should be zero. God created earth and man and

handed over the earth to man (The Holy Bible Gen 1:1, 26-29). Therefore Land belongs to man by God's free transfer of ownership, not for a price. Land belongs to the people and people are represented by government of the nation, which is to ensure free equitable distribution to all country citizens. The governments of all countries should take over by law all virgin lands in outskirts of cities, Towns and villages to be earmarked for housing. The government may however at its own discretion pay predetermined small compensation to those who may claim to be original owners. Such lands are to be allocated to citizens at near zero value or cost.

For instance at 35 U.S Dollars or equivalent in local currency per plot if site surveyed and demarcated only or 70 U.S Dollars or equivalent local currency if in addition certain basic services are provide. Our main concern on this issue of sustainability is not the concern with high/medium cost private houses, villa or country homes or palaces for the rich, but mass low cost housing for low income group. Whatever definition is given to this group in any country, it is the group we are concerned with here. For instance in Nigeria, according to the National Housing Policy, the low income group are wage earners or self employed people whose annual income are not more than N5,000 as of 1988 or 20% below maximum annual income of the highest salary grade level within the Civil Service Structure at any given time. The statistics then showed that about 70% of Nigerians were in this category.(Note that in 1988, N5,000 was the starting annual income for University graduates)

(iv) *Encouragement/promotion of the use of economical local building materials to reduce cost*.

Most government housing projects e.g. 3 – bedroom flat/bungalows in Nigeria for instance cost an equivalent of 20,000 – 25,000 U.S Dollars, but this is beyond the reach of most Nigerians. The issue is how do we bring this cost to 5,000 – 7,000 U.S Dollar (less than ₦1 million) for a 3-bedroom bungalow and much lower for 2- and 1-bedroom core units. Let us consider the followings:

The use of lime/bitumen/cement stabilized earth bricks depending on the location, the type of soil or laterite in the locality. Such bricks were used in ancient Egypt among others, and lasted over 500 years.

-The use of ordinary local rock boulders or bitumen/lime/cement stabilized earth/ bricks with bitumen/lime/cement stabilized earth/laterite as binder for foundation.

-The foundation walls/ superstructure walls are also of bitumen/lime/cement stabilized earth bricks and binder.

-The foundation wall is raised at least 450mm above the ground level, back filled both internal and external. The internal portion is moistened and well rammed for the bitumen/lime/ cement stabilized earth/laterite floor construction which could also be at least 150mm thick. The proportion of stabilizing agent is very small and much below 50% of what would normally be used in modern day construction.

-The Lintels are of wood, with timber wall plates used as the roof bearers. Simple timber trussed rafters are used for the roof and the roof coverings of approved thick galvanized iron (g.i.) roofing sheets. More research into alternative local roofing materials which are cheaper and more effective in terms of heat resistance and transmittance to interior during the hot day, than g.i. roofing sheet should be explored by various national research institutes in different countries. Ordinary hardboard ceiling, used for the internal/external ceiling.

-The Doors and windows are of wooden panels/frames but the windows and external doors to be fitted with burglary proof. No wall plastering except toilets and kitchen but others could be done progressively as economic situation improves or wholly- internal and external. The floor is to be finished in minimum 25mm cement and sand screed. The electrical installation is by surface wiring and simple lamp heads and switches which are very economical. Plumbing installations are made simple and functional. The toilets are of water closet, squat water closet with septic tank/soak away pit.

With above enumerated steps and use of local materials, a recently estimated cost of simple but functional 3-bedroom bungalow was in the

range of N0.7m -N1.5m (by direct labor execution), depending on the finishing, the lower range of which is within affordability of low income earners. For a project that would cost ₦0.7m by direct labor execution, since government is not after profit making in a situation as this, but more concerned with providing housing for all citizens at affordable cost, within a reasonable period of 5- 10 years and even beyond, it should not sell such houses for ₦ 2- 3 million because of contractors' profit, government logistics, lands and services provision, tax etc. otherwise it is the rich that will end up buying the houses, which will be beyond the reach of the low income earners.

Even in a scheme to be financed by government, let the people participate in the pricing. Let us have pilot scheme to determine the real cost. No overhead cost, no profit, the people will participate and even if there are, government will have to bear bulk of these as the father of all.

(v) *Let there be establishment of cooperative housing scheme in all countries,* such as Belgium and where it is not working well especially in Nigeria it should be reviewed and overhauled for better efficiency.

(vi) *Governments of countries at all levels should invest in housing and see the provision of housing as social or welfare provision rather than economic goods*. There should be more provision of sites and services scheme to promote orderly urban development.

(vii) *Government/Employers and other, local and international organization should by law house their workers*- not only by paying housing allowance which are normally not enough to rent accommodation but by acquiring land and build for them on owner-occupier basis within two to three or five years of commencement of the employment.

(viii) *Mortgage institutions property/housing corporations, Banks and other relevant stake holders in housing should be more readily accessible to people who intend to develop low cost housing scheme,* renovation/rehabilitation and with lending conditions that are more people oriented/friendly.

(ix) *Planners, Architect, Engineers and other professionals involved in housing delivery need to do a lot of work. They must ensure that designers of low income housing utilize the vernacular/ folk architecture especially in the rural areas*- a type of architecture of, by and for the people. It grew or emanate from their culture and tradition. It is the type that they like, not foreign type of houses. Even in the urban areas, the prevailing conditions and general lifestyles must be well considered in the utilitarian style of architecture in the people oriented housing provision.

It is considered that designs should consider on individual plots, with detached/bungalows type of development. They should be easily adaptable. A core house of one-bedroom flat consisting of 1 bedroom, 1 sitting room (lounge), 1 kitchen, 1 store, 1 verandah and capable of being developed into a full 3 or 4-bedroom bungalow as family size/family income increases.

(x*) Maximize the use of existing housing stock by upgrading standard of existing housing stock that has some defects or fall short of acceptable standard housing in any environmental condition especially in rural areas.* There should be provision and improvement of infrastructural facilities in the existing residential areas.

(xi) *Gain public commitment to housing program*-in order for the necessary sacrifices to be politically acceptable through enlightenment program.

(xii) *Evolve criteria and practice that facilitate better management and maintenance of the nation's housing stock.*

(xiii) *Governments of developed countries like North America, Europe and others should come to the aid of most developing countries in housing development* and monitor/ensure that those aids are not diverted into other uses- they can even require that to benefit from their aids national governments must have shown certain required degree of commitments in this sector. This will be their contribution towards ensuring that humanity and now is sheltered.

With easy access to very cheap land, economic

designs, utilization of economic/local but durable materials and harmonization of various issues considered above, more people, government and private organizations would be encouraged to go into housing development ; it is then, we can say that we are on the path to attainment of sustainable housing development.

4.0 Conclusion

The issue of sustainability in housing development is a progressive/continuous housing delivery program whereby countries must have adequate housing in quantity (enough for existing population) and quality that satisfies fairly nationally acceptable standard for immediate and future needs, which starts from next moment. Having discussed the challenges of housing to humanity we cannot rest on our oars, but every citizen of developed, developing and less developed countries of the world must wake up and tackle all issues manifesting or translating into housing problems. It is an issue requiring full and priority attention of all national governments if humanity is to be triumphant in this battle- by ensuring that housing development is brought a sustainable level.

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TABLES

TABLE 1: (i) Total World Population (1950 – 2025 A.D.) – By Regions

S/N	The World	1950	1990	2025
1	Asia	1,378,440,000 (54.7%)	3,060,750,000 (58.3%)	4,531,920,000 (55.2%)
2	Europe	393,120,000 (15.6%)	498,750,000 (9.5%)	525,440,000 (6.4%)
3	Africa	224,280,000 (8.9%)	654,750,000 (12.3%)	1,617,370,000 (19.7%)
4	USSR	181,440,000 (7.2%)	294,000,000 (5.6%)	369,450,000 (4.5%)
5	North America	166,320,000 (6.6%)	273,000,000 (5.2%)	344,820,000 (4.2%)
6	South America	163,800,000 (6.5%)	451,500,000 (8.6%)	779,950,000 (9.5%)
7	Oceania	12,600,000 (0.5%)	26,250,000 (0.5%)	41,050,000 (0.5%)
	World Population	**2.52 billion**	**5.25 billion**	**8.21 billion**

Source: Adapted from "South" Magazine, issue No III January, 1990 from an article-"A mega polis is born" P. 35 – 37

TABLE 1: (ii) Total Population (1900-2000) – Growth

Year	World Population	Interval (years)	Population Increase
1900	1.6 billion	-	-
1930	2.0 billion	30	0.4 billion
1960	3.0 billion	30	1.0 billion
1977	4.0 billion	17	1.0 billion
1989	5.0 billion	12	1.0 billion
1999	6.0 billion	10	1.0 billion

Source: UN Population Division, 2000 compiled survey

TABLE 2: Emergence of Megacities

(i) Population size of urban agglomerations with ≥ 8 million in 2000 AD

Agglomeration	Country	Population (in Millions)					
		1950	1960	1970	1980	1990	2000
Bangalore	India	0.8	1.2	1.6	2.8	5.0	8.2
Bangkok	Thailand	1.4	2.2	3.1	4.7	7.2	10.3
Beijing	China	3.9	6.3	8.1	9.0	10.8	14.0
Bombay	India	2.9	4.1	5.8	8.1	11.2	15.4
Buenos Aires	Argentina	5.0	6.8	8.4	9.9	11.5	12.9
Cairo	Egypt	2.4	3.7	5.3	6.9	9.0	11.8
Calcutta	India	4.4	5.5	6.9	9.0	11.8	15.7
Dacca	Bangladesh	0.4	0.6	1.5	3.3	6.6	12.2
Delhi	India	1.4	2.3	3.5	5.6	8.8	13.2
Istanbul	Turkey	1.1	1.7	2.8	4.4	6.7	9.5
Jakarta	Indonesia	2.0	2.8	3.9	6.0	9.3	13.7
Karachi	Pakistan	1.0	1.8	3.1	4.9	7.7	11.7
Lagos	Nigeria	0.3	0.8	2.0	4.4	7.7	12.9
Lima	Peru	1.0	1.7	2.9	4.4	6.2	8.2
Los Angeles	USA	4.0	6.5	8.4	9.5	11.9	13.9
Manila	Philippines	1.5	2.3	3.5	6.0	8.5	11.8
Mexico City	Mexico	3.1	5.4	9.4	14.5	20.2	25.6
Moscow	Russia	4.8	6.3	7.1	8.2	8.8	9.0
New York	USA	12.3	14.2	16.2	15.6	16.2	16.8
Osaka	Japan	3.8	5.7	7.6	8.3	8.5	8.6
Paris	France	5.4	7.2	8.3	8.5	8.5	8.6
Rio de Janeiro	Brazil	2.9	4.9	7.0	8.8	10.7	12.5
Sao Paulo	Brazil	2.4	4.7	8.1	12.1	17.4	22.1
Seoul	Korea (Republic of)	1.0	2.4	5.3	8.3	11.0	12.7
Shangai	China	5.3	8.8	11.2	11.7	13.4	17.0
Teheran	Iran (Islamic Rep. of)	1.0	1.9	3.3	5.1	6.8	8.5
Tianjin	China	2.4	3.6	5.2	7.3	9.4	12.7
Tokyo	Japan	6.7	1.7	14.9	16.9	18.1	19.0

Notes: *Bangkok refers to Bangkok- Thonburi; Cairo, Cairo-Giza- Imbaba, Lima, Lima- Callao; Los Angele, Los Angeles – Long Beach; Manila, Metro- Manila; New York, New York – North Eastern New Jersey; Osaka, Osaka – Kobe;Tokyo, Tokyo – Yokohama. The Population of Greater London exceeded 8 million in 1950 (8.7 million) and 1960 (9.1million), but has been under 8 million since 1980.*

TABLE 2 : Emergence of Megacities (1950-2000)

(ii) World's 10 largest Urban agglomerations, ranked by population (in millions) 1950-1970

		1950			1960			1970
Rank	**Agglomeration**	**Population**	**Rank**	**Agglomeration**	**Population**	**Rank**	**Agglomeration**	**Population**
1	New York	12.3	1	New York	14.2	1	New York	16.2
2	London	8.7	2	Tokyo	10.7	2	Tokyo	14.9
3	Tokyo	6.7	3	London	9.1	3	Shangai	11.2
4	Paris	5.4	4	Shangai	8.8	4	Mexico City	9.4
5	Shangai	5.3	5	Paris	7.2	5	London	8.6
6	Buenos Aires	5.0	6	Buenos Aires	6.8	6	Buenos Aires	8.4
7	Chicago	4.9	7	Los Angeles	6.5	7	Los Angeles	8.4
8	Moscow	4.8	8	Moscow	6.3	8	Paris	8.3
9	Calcutta	4.4	9	Beijing	6.3	9	Beijing	8.1
10	Los Angeles	4.0	10	Chicago	6.0	10	Sao Paulo	8.1

TABLE 2 : Emergence of Megacities (1950-1970)

(ii) World's 10 largest Urban agglomerations, ranked bypopulation (in millions) 1980-2000

		1980			1990			2000
Rank	**Agglomeration**	**Population**	**Rank**	**Agglomeration**	**Population**	**Rank**	**Agglomeration**	**Population**
1	Tokyo	16.9	1	Mexico City	20.2	1	Mexico City	25.6
2	New York	15.6	2	Tokyo	18.1	2	Sao Paulo	22.1
3	Mexico City	14.5	3	Sao Paulo	17.4	3	Tokyo	19.0
4	Sao Paulo	12.1	4	New York	16.2	4	Shangai	17.0
5	Shangai	11.7	5	Shangai	13.4	5	New York	16.8
6	Buenos Aires	9.9	6	Los Angeles	11.9	6	Calcutta	15.7
7	Los Angeles	9.5	7	Calcutta	11.8	7	Bombay	15.4
8	Calcutta	9.0	8	Buenos Aires	11.5	8	Beijing	14.0
9	Beijing	9.0	9	Bombay	11.2	9	Los Angeles	13.9
10	Rio de Janeiro	8.8	10	Seoul	11.0	10	Jakarta	13.7

Notes: *Rank of Megapolises: -Between 1985 and 1990, Mexico City surpassed Tokyo – Yokohama in population and became the largest megapolis in the world. -The United Nations estimates that Mexico had 20.2 million inhabitants in 1990, exceeding the population of Tokyo (18.1 million), Sao Paulo (17.4 million) and New York (16.2 Million).*